CHAPTER 16

RADON

16-1 SCOPE

This Chapter contains criteria for assessing radon in facilities and mitigating excessive radon levels. The objective of these criteria is to control radon exposures and prevent possible adverse health effects in persons living and working on DOD installations.

16-2 DEFINITIONS

16-2.1 Radon. A naturally-occurring, odorless, colorless, tasteless inert radioactive gas that is formed from the radioactive decay of uranium. Radon gas becomes a health hazard when it accumulates in an enclosed area or poorly ventilated spaces, and occupants breathe the high levels of radon over a prolonged period of time. The gas can move through small spaces in soil and rock on which a house or structure is built. It can seep into a structure through dirt floors, cracks in concrete floors and walls, floor drains, sumps, joints, and tiny cracks or pores in hollow-block walls.

16-2.2 Initial Radon Screening. Short-term radon testing in a statistically-representative sample of selected high priority facilities (family housing, child development centers, schools, dormitories, etc.). The purpose of initial screening is to identify installations having high radon levels.

16-2.3 Detailed Radon Testing. A comprehensive testing program for radon in all occupied or to be occupied buildings ("Occupied" defines as more than four hours a day on a regular basis). If initial testing results are greater than or equal to 4 picoCuries per Liter (pCi/L), then a retest with short or long term detectors must be accomplished to verify results.

16-2.4 Mitigation. Actions taken to reduce radon levels in facilities having radon levels greater than or equal 4 pCi/L as identified during detailed radon testing.

16-2.5 Post Mitigation Monitoring. Follow-up radon testing in facilities where mitigation has been completed. The purpose of post-mitigation monitoring is to ensure that mitigation actions were effective in reducing radon levels below 4 pCi/L. If post mitigation monitoring testing results are greater than 4 pCi/L, then a retest must be accomplished to verify results.

16-3 CRITERIA

16-3.1 Facility Prioritization. Facilities on DOD installations will be prioritized for radon assessment and mitigation as follows:

a. Priority 1: Military family housing, daycare centers, hospitals, schools, unaccompanied officer/enlisted quarters, confinement facilities, visiting officer/enlisted quarters, and dormitories/barracks.

b. Priority 2: Administrative areas having 24-hour operations.

c. Priority 3: All other structures routinely occupied over 4 hours per day.

16-3.2 Initial Radon Screening. Initial screening samples should have been collected from selected Priority 1 facilities by 1 June 1995. Priority 2 and Priority 3 facilities are not involved in this initial screening program when an installation has Priority 1 facilities.

16-3.3 Priority 2 and Priority 3 Facilities. Installations that have only Priority 2 and Priority 3 facilities should have conducted initial radon screening by 1 January 1996.

16-3.4 Detailed Radon Testing. Detailed testing is required if any initial screening sample results are equal to or greater than 4 pCi/L. During detailed testing radon samples will be collected in all Priority 1, Priority 2, and Priority 3 facilities on the installation.

16-3.5 Mitigation. Based on detailed testing results, installations will mitigate facilities having radon levels equal to or greater than 4 pCi/L according to the schedule in Table 16-1.

16-3.6 Installations will have a quality assurance/quality control program to ensure validity of test results as specified by the respective component radon assessment and mitigation program. A system to periodically check and document the condition of the radon detectors should be implemented as part of this quality assurance/quality control program.

16-3.7 Installations will develop an information package on potential health effects of radon and provide the information along with radon test results to facility occupants upon assignment.

16-3.8 Installations will develop and implement a post-mitigation monitoring program to confirm and document the effectiveness of mitigation actions.

TABLE 16-1
RADON MITIGATION SCHEDULE

Radon Level (pCi/L)	**Mitigation below 4 pCi/L Required Within (Based on detailed radon testing)**
Greater than 200	1 month of sample results or move occupants
200 or less, but greater than 20	6 months of sample results
20 or less, but greater than 8	3 to 4 years
8 or less, but greater than or equal to 4	4 to 5 years
Less than 4	No action required

Notes:

1. Examples of detection devices typically used in assessment of radon facilities:

   (a) Short-term radon detection devices:
   - Charcoal canister radon detection device, normally exposed for two to seven days.
   - Short-term electorate-passive environmental radon monitor (E-PERM).
   - Short-term electorate ion chamber radon detector (ES-EC).

   (b) Long-term radon detection devices:
   - Alpha-track detector (ATD's), normally exposed for at least three months, but preferably for a year.
   - Long-term electorate ion chamber radon detector (EL-EC).
   - Long-term E-PERM.